# **STATISTICS ON TURKEY**

ADNAN KISA, Ph.D.

PROFESSOR OF HEALTH POLICY AND ECONOMICS

ZİRVE UNIVERSITY

GAZİANTEP-TURKEY

## Map of Turkey



Source: CIA, 2007.

## Population/demographic indicators 1970-2010 (selected years)

	1970	1980	1990	2000	2004	2005	2006	2007	2008	2009	2010
Population (mid-year, thousands)	35 321	44 439	55 120ª	64 252	67723	68566	69395	70215	71 095	72 050	73 003
Females (% total population)	49.4	49.3	49.3	49.3	49.6ª	49.6ª	49.6ª	49.9	49.8	49.9	49.9
Population < 15 years (%)	35.0	29.8	34.9	29.8	28.8	28.4b	28.1b	26.4	26.3	26.3	26.0
Population 65+ years (%)	4.3	5.7	4.3	5.7	5.7°	5.9b	6.0 <sup>b</sup>	7.1	6.8	6.9	6.9
Population growth (%)	25.0	24.9	17.0	13.8	12.4	12.2	11.9	11.7	13.4	13.3	13.0
Population density (per km²)	43.4	54.6	67.7	78.9	83.2	84.2	85.2	86.2	87.3	88.5	89.7
Fertility rate (total births per woman)	4.90°	3.40	2.93	2.38	2.23	2.20	2.17	2.15	2.14	2.12	2.11
Crude birth rate (per 1 000 population)	34.50	30.8b	24.1 <sup>d</sup>	20.3d	19.0ª	18.74	18.4 <sup>d</sup>	18.0	17.9	17.8	17.5
Crude death rate (per 1 000 population)	11.60	9.0b	7.1 <sup>d</sup>	6.6ª	6.4 <sup>d</sup>	6.44	6.34	6.4	6.4	6.3	6.3
Age dependency ratio	85.9	78.1	64.7	55.1	52.8ª	52.3ª	52.6ª	50.4	49.5	49.2	48.9
% population urban	28.7	35.9₺	51.3	59.2	60.3	62.1b	62.7b	67.5	69.2	70.1	71.0
Literacy rate (%) in population aged 15+ years	56.2	67.5	80.5	87.3	87.4 <sup>d</sup>	88.16	88.1 <sup>d</sup>	88.7°	89.1	n/a	n/a

Sources: TURKSTAT, 2010b; Specific data: \*OECD, 2009; \*TURKSTAT, 2010a; \*WHO Regional Office for Europe, 2010; \*TURKSTAT, 2010c.

Notes: The age dependency ratio is the ratio of the combined child population (aged 0-14) and the elderly population (aged 65+) to the working age population (aged 15-64); n/a: Data not available.

## Macroeconomic indicators, 1990-2010 (selected years)

	1990	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	20 10
GDP (1000 YTL)*	393	7 762	166658	240224	350476	454781	559 033	648932	758391	843 178	950 098	952558	1103749
GDP (US\$, PPP)*	322 832	426 69 5	588553	561 159	572 094	588070	688 850	781 243	881 098	960256	969488	943127	1103749
GDP (US\$ per capita)*	2 681	3 379	3 924	2857	3349	4 317	5 494	6 720	7268	9333	11 4 63	8 479	10028
GDP (US\$ per capita, PPP)*	5749	6908	9 160	8 616	8667	8 794	10169	11 391	12692	13669	13 598	14 106	15258
Annual GDP growth (%)*	9.2	6.7	6.8	-5.7	6.2	5.3	9.4	8.4	6.9	4.6	1.1	0.2	15.9
Short-term debt outstanding (current US\$)	9 500	15 701	28301	16 403	16424	23013	31 880	37 103	40354	41747	51 793	49577	54 472
Value added in industry (% of GDP)*	25.0	25.8	24.6	23.8	23.2	23.5	23.0	23.0	22.9	22.3	21.9 (6 months)	n/a	n/a
Value added in agriculture (% of GDP)*	17.0	15.0	10.7	9.4	11.4	11.1	10.7	10.6	9.4	8.5	8.5 (6 months)	n/a	n/a
Value added in-services (% of GDP)*	58.0	59.2	64.7	66.8	65.4	65.4	66.3	66.4	67.7	69.2	69.6 (6 months)	n/a	n/a
Consolidated budget deficit/GNPs	-2.3	-3.0	-8.2	-12.4	-11.9	-8.8	-5.4	-1.3	-0.6	-1.6	-1.8	n/a	n/a
Labour force (total, million)*	20.5	22.5	23.0	23.4	23.8	23.6	24.2	24.5	23.2	23.5	24.3	24.7	25.6
Unemployment (% total population) <sup>4</sup>	8.04	7.64	6.54	8.44	10.34	10.54	10.34	10.34	9.95	9.95	13.65	14.00	11.90
Official exchange rate (YTL to the US\$)°	26076	45 673	623704	1224411	1 505 839	1493 067	1 422 341	1.34	1.43	1.30	1.29	1.55	1.50
Real interest rate <sup>o</sup>	62.726	106.316	198.956	59.06	44.06	26.06	18.0	13.508	17.506	15.757	15.70	11.60	8.12
Annual inflation rate (%)*	60.3	93.6	39.0	68.5	29.7	18.4	9.3	10.5	9.6	8.4	10.06	6.50	6.40

Sources: \*TURKSTAT, 2009b, 2011b; \*Turkish Treasury, 2011; Ministry of Finance, 2011; \*SPO, 2009b; \*TURKSTAT, 2009d; SPO, 2011. Note: \*From 2005, changes were made to the currency and 6 zeros were deleted from the Turkish lina (YTL).

# Mortality and health indicators, 1970-2010 (selected years)

	1970	1980	1990	1993	1998	2000	2003	2005	2006	2007	2008	2009	2010
Life expectancy at birth (years)													
Female	56.3	60.3ª	69.5 <sup>b</sup>	70.6 <sup>b</sup>	72.4 <sup>b</sup>	73.1 <sup>b</sup>	74.4 <sup>b</sup>	75.2 <sup>b</sup>	75.6°	76.0 <sup>b</sup>	76.3b	76.5	76.8
Male	52.0	55.8ª	65.4b	66.4	68.3b	69.0b	70.20	71.0b	71.20	71.4b	71.5b	71.7	71.8
Total	54.2	58.1ª	67.4 <sup>b</sup>	68.5 <sup>b</sup>	70.3 <sup>b</sup>	71.0 <sup>b</sup>	72.1 <sup>b</sup>	73.0 <sup>b</sup>	73.3 <sup>b</sup>	73.6 <sup>b</sup>	73.8b	74.0	74.3
Mortality rate, (per 1000 live births)													
Infant	145.0	117.5	51.5	52.6°	42.7°	31.6°	28.5°	18.4°	16.9 <sup>d</sup>	15.9 <sup>d</sup>	17.0°	13.14	10.1 <sup>d</sup>
Under 5 years	201.0	133.0ª	82.0	61.0°	52.0°	44.0	37.0€	29.0°	28.7 <sup>d</sup>	26.6 <sup>d</sup>	24.0°	17.0	13.0

Sources: OECD, 2008a.; specific data: "WHO Regional Office for Europe, 2008; "TURKSTAT, 2010c; "Hacettepe University Institute of Population Studies, 1994, 1999, 2004, 2009; "Ministry of Health General Directorate of Mother and Child Health and Family Planning, 2010, (unpublished data); "World Bank, 2009.

#### Main causes of death, 2004

Rank	Causes of death	% of total deaths
1	Ischaemic heart disease	21.7
2	Cerebrovascular disease	15.0
3	Chronic obstructive pulmonary disease	5.8
4	Perinatal causes	5.8
5	Lower respiratory infections	4.2
6	Hypertensive heart disease	3.0
7	Trachea, bronchus and lung cancers	2.7
8	Diabetes mellitus	2.2
9	Road traffic accidents	2.0
10	Inflammatory heart disease	1.9
11	Congenital anomalies	1.6
12	Diarrhoeal diseases	1.5
13	Stomach cancer	1.3
14	Nephritis and nephrosis	1.1
15	Leukaemia	1.0

Source: Ministry of Health & Başkent University, 2004.

Health-adjusted life expectancy and loss of healthy life expectancy for all age groups at the national level for males and females, 2004

Age (years)	National HALE	LHE	Males HALE	LHE	Females HALE	LHE
0	62.49	7.28	60.8	7.83	64.0	7.94
1	63.89	7.48	62.2	7.76	65.4	8.16
5	60.71	7.25	59.0	7.46	62.2	7.94
10	56.10	7.09	54.4	7.29	57.6	7.75
15	51.42	6.92	49.8	7.06	52.9	7.58
20	47.05	6.56	45.4	6.80	48.5	7.14
25	42.70	6.21	41.2	6.39	44.2	6.63
30	38.35	5.85	36.9	6.02	39.8	6.25
35	34.02	5.48	32.6	5.66	35.5	5.80
40	29.74	5.12	28.4	5.24	31.3	5.30
45	25.54	4.78	24.2	4.92	27.1	4.88
50	21.64	4.30	20.4	4.39	23.2	4.29
55	17.91	3.86	16.8	3.91	19.5	3.66
60	14.39	3.48	13.4	3.54	15.9	3.15
65	11.37	2.89	10.6	2.92	12.7	2.49
70	8.65	2.41	8.1	2.39	9.8	1.91
75	6.32	1.99	5.9	2.02	7.4	1.34
80	4.29	1.80	4.0	1.83	5.6	0.74
85+	2.25	2.11	1.9	2.30	2.6	1.92

Source: Ministry of Health and Başkent University, 2004.
Notes: HALE: Health-adjusted life expectancy; LHE: Loss of healthy life expectancy.

# Factors affecting health status, 1970-2007 (selected years)

Indicators	1970	1980	1990	1995	2000	2001	2002	2003	2004	2005	2006	20071
Prevalence COPD (%)	n/a	0.08	0.14	0.19	0.23	0.23	0.26	0.29	n/a	n/a	n/a	n/a
Pure alcohol consumption (litres per capita)	1.10	1.78	1.39	1.65	1.47	1.42	1.37	1.45	1.37	1.31	1.20	1.32
RTAs with injury (per 100 000)	49.6	53.6	156.0	185.4	202.8	169.6	167.2	168.3	190.0	213.8	231.7	267.8
Persons killed or injured in RTAs (per 100 000)	61.29	62.78	167.36	194.81	211.00	176.40	173.90	173.90	n/a	n/a	n/a	n/a
Average calories available per person per day (kcal)	3017	3 281	3 5 3 9	3444	3372	3 347	3357	n/a	n/a	n/a	n/a	n/a

Sources: WHO, 2006a. \*TURKSTAT, 2009c.

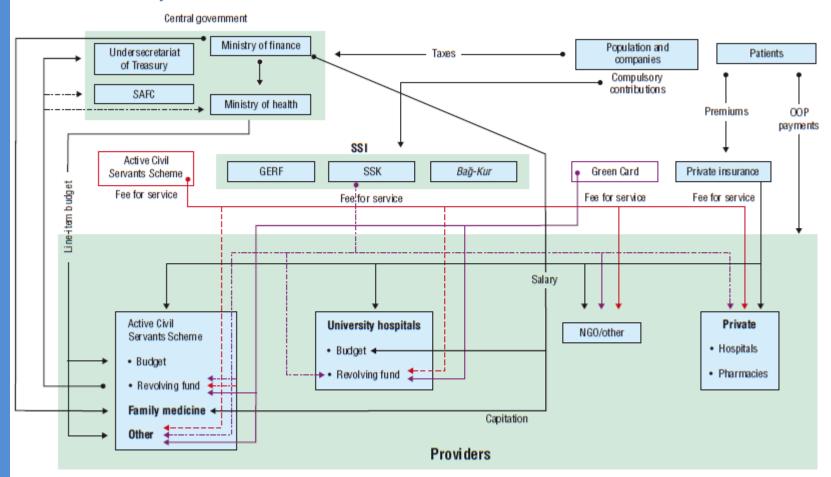
Notes: COPD: Chronic obstructive pulmonary diseases; RTA: Road traffic accident; n/a: Data not available.

### Health care organizations by functions in Turkey

Function	Organization
Policy-making	Grand National Assembly (parliament)
	State Planning Organization
	Ministry of Health
	Higher Education Council
	Supreme Court
Administrative decision-making	Ministry of Health
	Provincial Health Directorates
Health services financing	Ministry of Finance
	SSI
	Private insurance companies
	Self-financed institutions
	International agencies
Delivery of health care services: public	Ministry of Health
	University hospitals
	Ministry of National Defence hospitals
Delivery of health care services: private	Private hospitals
	Foundation hospitals
	Minority hospitals
	Independent general practitioners/specialists
	Out-patient treatment clinics
	Laboratories and diagnostic centers
	Pharmacies medical devices and equipment sellers
NGO	Kızılay (Red Crescent)
	Various foundations and associations

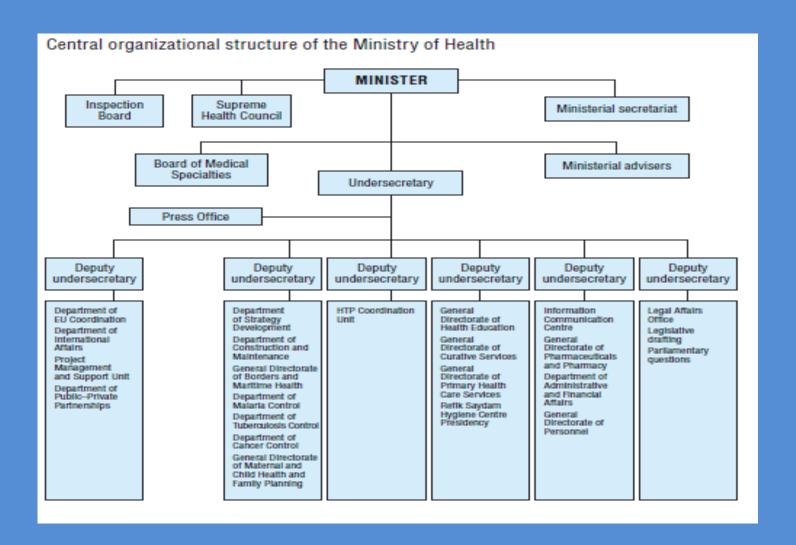
Source: Yardım et al., 2007.

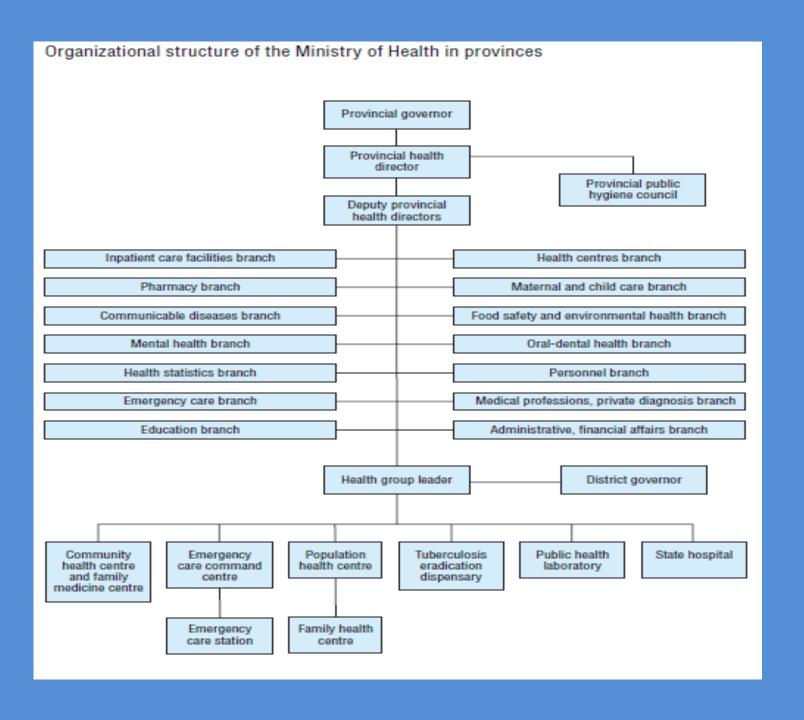
#### Overview of the health system



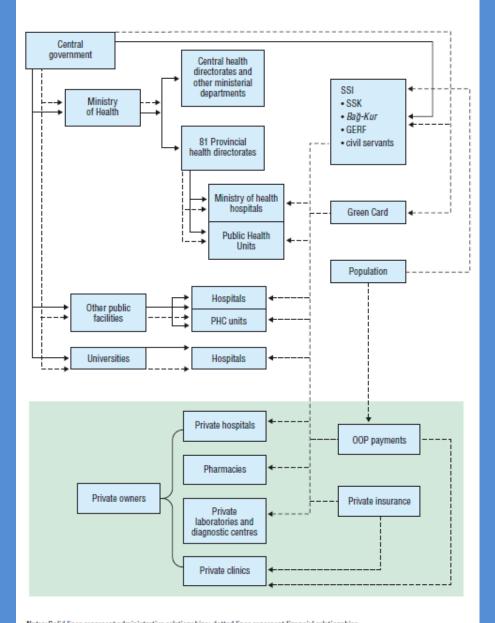
Source: Based on Mollahililoğlu et al., 2007a.

Notes: Solid lines represent managerial links; dotted lines represent financial relationships.





#### Financial flows in the Turkish health system



Notes: Solid lines represent administrative relationships; dotted lines represent financial relationships.

#### Health expenditure in Turkey, 1980-2008 (selected years)

	1980	1985	1990	1995	2000°	2005*	2007ª	2008
Total expenditure on health/capita (US\$ PPP)	70	68	155	195	458	622	813	902
Total expenditure on health (% of) GDP	2.4	1.6	2.7	2.5	4.9	5.4	6.0	6.1
Public expenditure on health (% of total expenditure on health)	29.4	50.6	61.0	70.3	62.9	67.8	67.8	73.0

Sources: OECD, 2006; \*TURKSTAT, 2009e.

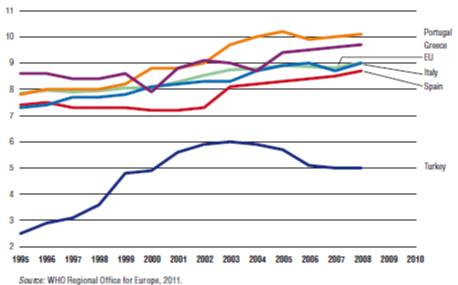
#### Trends in health expenditure in Turkey, 1980-2008 (or latest available year)

	1980-1985	1985-1990	1990-1995	1995-2000(	2000–2008 or latest available year)
Mean annual real growth rate in total health expenditure (%) <sup>a</sup>	0.8	9.6	5.0	6.4	15.2
Mean annual real growth rate in GDP (%)a,d	4.8	5.7	3.2	3.8	2.8
Total government spending (% GDP) <sup>b</sup>	n/a	n/a	n/a	26.8-42.79	42.7-38.9
Government health spending (% total government spending) <sup>b</sup>	n/a	n/a	n/a	10.1–9.8°	9.8-13.9
Government health spending (% of GDP) <sup>b</sup>	0.7-0.8	0.8-1.6	1.6-1.8	1.8-3.1	3.1-4.4 (2007)
Private health spending (% total expenditure on health) <sup>c,t</sup>	76.5-49.4	49.4-39.0	39.0-29.7	29.7–37.1	37.1–27.0 (2007)

Sources: \*TURKSTAT, 2008c, 2009e; SPO, 2008; \*WHO, 2006b; \*OECD, 2006.

Notes: "Calculated as the mean of the annual growth rates in national currency units at 1995 GDP prices. New GDP deflators were calculated by 1995 prices; then, real growth was calculated by dividing each period's GDP by new GDP deflators; finally, mean annual growth rates for five-year time periods were calculated; "1996–2000; "Range shows value at beginning of period and end of period; n/a: Data not available.

Trends in health expenditure as a share (%) of GDP in Turkey and selected other countries WHO estimates, 1995-2008

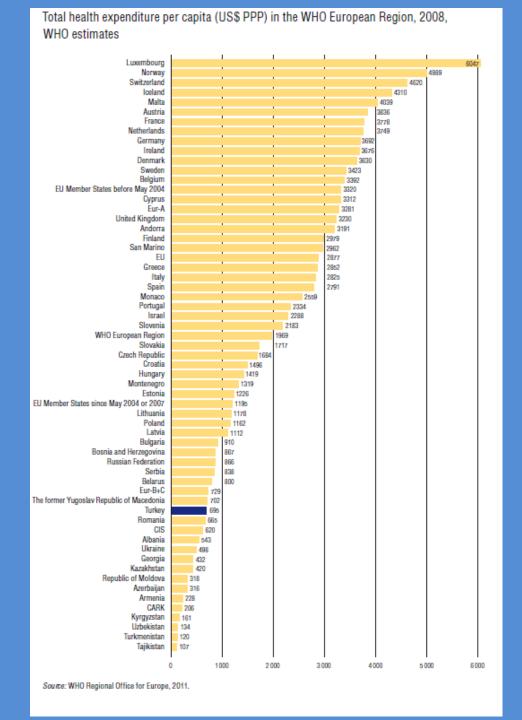


Health expenditure and GDP (at current prices), 1998-2008

Years	GDP (million old TL)	GDP (million YTL)	Total health expenditure (million TL)	Share of health expenditure (% old GDP)	Share of health expenditure (% of new GDP)
1998	52 225	70 203	n/a	n/a	n/a
1999	77 415	104 596	4 985	6.4	4.8
2000	124 583	166 658	8 248	6.6	4.9
2001	178 412	240 224	12 396	6.9	5.2
2002	277 574	350 476	18 774	6.8	5.4
2003	359 763	454 780	24 279	6.7	5.3
2004	430 511	559 033	30 021	7.0	5.4
2005	487 202	648 932	35 359	7.3	5.4
2006	576 322	758 391	44 069	7.6	5.8
2007	n/a	843 178	50 904	n/a	6.0
2008	n/a	950 354	52 320	n/a	6.1

Sources: TURKSTAT, 2008c, 2009e; Yardım et al., 2007.

Note: n/a: Data not available.



#### Total health expenditure by type of service and financing agent, 2000a

	Inpatient care (%)	Outpatient care (%) <sup>b</sup>	Prevention and public health services (%)	Medical supplies given to outpatients (%)*
Central government	37.9	19.6	95.8	14.3
Local government	1.1	0.5	0.3	0.8
Social security funds	46.1	25.2	0.0	46.8
Private insurance	4.4	3.0	0.1	1.4
Household expenditure	8.7	42.8	0.0	32.9
Other private expenditure	1.8	8.9	3.8	3.8

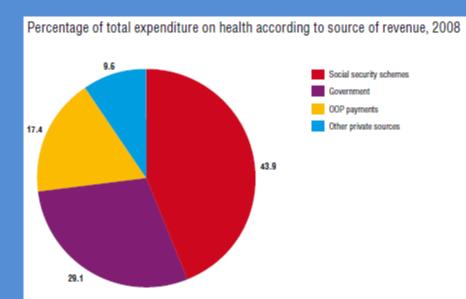
Source: Ministry of Health RSHCP School of Public Health, 2004.

Notes: \*Latest year where financing data are available by type of service is 2000; \*Primary care services are included in this category; \*Includes pharmaceuticals.

#### Health insurance coverage and contribution rates

Population group	Coverage mechanism	Contribution source and rate	Compulsory or voluntary membership	Coverage for dependants
Private sector employees	GHIS	12.5% of wage (7.5% employer, 5% employee)	Compulsory	Yes
Blue collar public sector workers	GHIS	12% of wage (7% employer, 5% employee)	Compulsory	Yes
Self-employed, artisans and merchants	GHIS	12% of income, determined as the base for premium <sup>a</sup>	Compulsory for those whose income is more than the minimum wage	Yes
Agricultural workers	GHIS	12% of income, determined as the base for premium <sup>a</sup>	Compulsory for those whose income is more than the minimum wage	Yes
Active civil servants	GHIS	General budget, 12% of salary	Compulsory	Yes
Retired civil servants <sup>b</sup>	GHIS	No premium is paid as this group made contributions when they were active civil servants	Compulsory	Yes
Citizens with personal monthly income less than one-third of the base wage rate	Green Card Scheme	General budget	Subject to means test to qualify	No
Unemployed people with unemployment insurance	GHIS	General budget	When they are eligible	No
Foreigners residing in the country <sup>d</sup>	GHIS	12% of income, determined as the base for premium	Voluntary	No

Notes: "The income bands from which premiums are calculated are related to the base wage rate set by the government, with the highest (maximum) band being 6.5 times this amount. The insured person chooses the relevant premium rate within this range; "The health expenditure of government retirees are financed by the government and the contributions of active civil servants, not the retirees themselves. The revenues paid in from these two sources cover retirement, old age and health care benefits. There is no specific health care premium per se. The government also provides substantial additional subsidies from general revenues as there is always a gap between income and expenditure; "Unemployment insurance is at its infancy in Turkey (began in 1999) and is paid to the unemployed for 180–300 days depending on a person's previous social security premium payments; "Only if they have legal permission to reside in the country and they do not have social security in their country of origin. They have to reside in the country for at least one year to become eligible.



Source: TURKSTAT, 2009.

Sources of revenue as a percentage of total expenditure on health, 1980–2008 (selected years)

Selected ratio indicators for expenditures on health	1980ª	1985*	1990*	1995 <sup>b</sup>	2000°	2005¢	2007 <sup>d</sup>	20084
THE (% of GDP)	2.4	1.6	2.7	2.5	4.9	5.4	6.0	6.1
Public expenditure on health (% of THE)	29.4	50.6	61.0	70.2	62.9	67.8	67.8	73.0
General government expenditure (% of THE)	n/a	n/a	n/a	43.1	28.0	28.2	29.1	29.1
Social security funds (% of THE)	n/a	n/a	n/a	27.1	34.9	39.6	38.7	43.9
PHE (% of THE)	76.5	49.4	39.0	29.8	37.1	32.2	32.2	27.0
OOP payment of private households (%)	n/a	n/a	n/a	n/a	27.6	22.8	21.8	17.4
Prepaid and risk-pooling plans (%)	n/a	n/a	n/a	n/a	4.4	3.6	n/a	n/a
NGOs serving households (%)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
General government expenditure on health (% of total)	n/a	n/a	n/a	n/a	9.8	11.3	12.1	n/a
OOP payments of private households (% of PHE)	n/a	n/a	n/a	n/a	74.8	70.8	67.8	64.4
Prepaid and risk-pooling plans (% PHE)	n/a	n/a	n/a	n/a	11.8	12.8	n/a	n/a

Sources: \*OECD, 2005; \*Ministry of Health, 1998b; \*WHO, 2006b; \*TURKSTAT, 2009e.

Notes: THE: Total expenditure on health; PHE: Private sector expenditure on health; n/a: Data not available.

### Coefficients used to determine family practitioner payments

Population/patient group	Coefficient applied
Children under 5 years of age	1.6
Children and adults aged between 5 and 65 years	0.79
Adults over 65 years	1.6
Pregnant women	3.0
Prisoners	2.25

### Health system legislation in Turkey

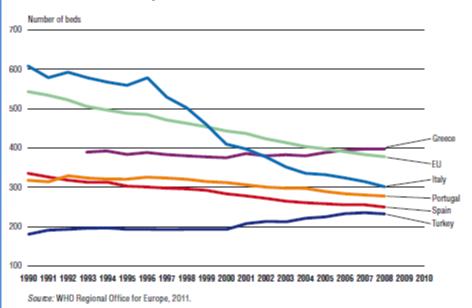
Law	Year adopted	Details
Health Care Personnel Law	1928	Outlines the rules and working conditions of health care personnel
Pharmaceutical and Medical Preparations Law	1928	Regulates all rules governing the production, distribution and use of pharmaceutical or medical products
Law on Public Hygiene	1930	One of the basic laws of the health care system; it details the role of the Ministry of Health, control of infectious diseases, hygiene regulations and so on
Law on Establishment of the Central Hygiene Institute	1940	The institute was established to conduct scientific research and investigations, including laboratory diagnosis, for the protection and improvement of public health; the production and regulation of specific biological products; training; and research
Pharmacists and Pharmacies Law	1953	Sets out the rules governing pharmacists and the establishment of pharmacies
Revolving Funds Law	1961	Establishes revolving funds in public organizations and sets out their rules and regulations
Socialization of Health Care Services Law	1961	Outlines the principles and rules of the socialized health care system
Compensation and Working Conditions of Health Personnel Law	1980	Outlines the rules and regulations governing the payment and working conditions of health care personnel
Legislative Decree on the Organization and Functions of the Ministry of Health	1983	Establishes the structure, role and functions of the Ministry of Health and its departments
Family Planning Law	1983	Regulates the principles of family planning, abortion, sterilization, and procurement and manufacturing of contraceptives
Basic Law on Health Care Services	1987	Outlines the main principles of the provision of health care services
Law on Meeting the Health Care Expenditures of the Poor through the Green Card	1992	Outlines the eligibility criteria for the Green Card and sets the rules and regulations regarding health care expenditure
Social Security Institution Law	2006	Establishes the SSI and sets the rules for merging the main social security organizations (SSK, Bağ-Kur and GERF) under this new body
Social Insurance and General Health Insurance Law	2006	Outlines social security rules in general and the General Health Insurance scheme, in particular; law came into effect 1 October 2008

Hospitals (public and private) and their bed capacities in Turkey, 2000-2010 (selected years)

	2 0 0 0 No. hospitals	-	2000 No. hospitals		2007 No. hospitals		2008 No. hospitals		2009 No. hospitals		20 10 No. hospitals	0 No. beds
Acute care hospitals												
General	1 065	125 978	1 032	153 292	1 140	157 162	1 171	157 778	1219	166 002	1 266	170 710
Health centres	141	1062	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Obstetric and paediatric hospitals	61	8 528	71	10 353	73	11 473	74	11 527	63	10 662	63	10 554
Chest disease hospitals	30	5 687	23	4 940	22	4 506	22	4 468	19	4 090	18	3 916
Chest and cardiovascular surgery centres	6	977	6	2 056	6	2 058	7	2 403	11	2 983	11	2 950
Cardiology institutes	5	293	5	316	5	331	5	605	1	200	1	116
Paediatric hospitals	9	1 573	10	2 407	10	2563	8	2 333	6	2 056	7	2 260
Ophthal mology hospitals	6	333	10	357	15	366	18	475	24	559	26	598
Venereal diseases hospitals	2	99	1	79	1	79	1	79	1	79	1	31
Emergency and traumatology hospitals	6	425	5	317	5	320	5	320	3	186	2	115
Occupational diseases hospitals	3	104	2	160	2	152	2	156	2	156	2	156
Renal health and dialysis centres	348	n/a	679	n/a	762	n/a	837	n/a	854	n/a	841	n/a
Dispensary and infirmary beds	13	82	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Dental hospitals	1	12	3	38	4	38	3	55	5	77	5	75
Total	1696	145 153	1 847	174 315	2 04 5	179 048	2 153	180 199	2 208	187 050	2 243	191 481
Long-term care hospitals												
Diabetes	3	69	2	64	2	64	2	64	2	66	2	61
Mental health and mental diseases	8	3 627	10	4 443	10	3 507	11	4 359	12	4742	12	4 692
Bone and bone diseases	3	816	3	762	3	714	3	635	3	686	3	636
Physical therapy and rehabilitation	11	1340	14	1 642	13	1704	12	1 660	12	1 660	14	1 736
Leprosy	2	160	2	150	2	150	2	175	1	50	1	50
Oncology	4	829	4	1 475	4	1004	4	973	5	1 295	5	1 294
Tropical diseases	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total	31	6841	35	8 536	34	7 143	34	7 866	35	8499	37	8 469
Overall total	1 727	151 994	1 882	182 851	2 079	186 191	2 187	188 065	2 243	195 5 49	2 280	199 950

Sources: Ministry of Health, 1988, 2010. Note: n/a: Data not available.





Operating indicators for selected hospitals, 2008

Hospitals <sup>a</sup>	Bed occupancy (%)	Average length of stay (days)	Bed turnover rate (%) (patient) <sup>b</sup>	Turnover interval (days)	Ratio of hospitalized patients (%)	Crude death rate (%)
General	62.2	4.0	56.9	2.4	3.2	1.4
Chest diseases	82.4	8.9	33.6	1.9	5.6	2.8
Obstetrics and paediatric	70.8	2.6	98.0	1.1	7.3	0.3
Mental health and mental diseases	78.5	23.6	12.2	6.5	4.9	0.7
Osteopathic	59.8	10.3	21.1	6.9	3.3	0.0
Chest and cardiovascular surgery	66.9	5.8	41.8	2.9	4.9	3.0
Physical therapy and rehabilitation	81.1	18.2	16.3	4.2	3.6	3.1
Total	63.9	4.1	57.2	2.3	3.5	1.3

Source: Ministry of Health General Directorate of Curative Services (unpublished data).

Notes: "Excludes Ministry of National Defence hospitals; "Calculated by dividing the total number of patients by the total number of beds.

## Items of diagnostic imaging technologies by region, 2010

		(	CTs per million		MRIs per million
Region	Population	No. CT	population	No. MRI	population
Mediterranean	9 423 231	111	11.78	80	8.49
Western Anatolia	7 018 194	95	13.54	72	10.26
Western Black Sea	4 518 786	57	12.61	41	9.07
Western Marmara	3 164 048	42	13.27	32	10.11
Eastern Black Sea	2 516 167	32	12.72	24	9.54
Eastern Marmara	6 841 607	69	10.09	52	7.60
Aegean	9 693 594	128	13.20	93	9.59
South-eastern Anatolia	7 592 772	65	8.56	47	6.19
Istanbul	13 255 685	197	14.86	178	13.43
North-eastern Anatolia	2 202 106	19	8.63	14	6.36
Central Anatolia	3 849 267	48	12.47	32	8.31
Mid-eastern Anatolia	3 647 531	45	12.34	31	8.50
All regions	73 722 988	908	12.32	696	9.44

Source: Ministry of Health, 2011b.

Notes: CT: Computed tomography scanner; MRI: Magnetic resonance imager.

## Health care workforce in Turkey, 2010

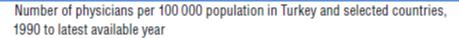
Physicians	
Total number active (all categories/public and private sectors)	118 641
Per 100 000 population	167.0
GPs per 100 000 population	53.0
Specialized physicians per 100 000 population	86.0
In public sector (%)	80.5
In private sector (%)	19.5
Nurses	
Total number (all categories/public and private sectors)	114 772
Per 100 000 population	156.0
In public sector (%)	15.0
In private sector (%)	85.0
Ratio of doctors to nurses	1.08
Midwives	
Total number (public and private sectors)	50 343
Per 100 000 population	68.0
Auxiliary workers	
Total number (public and private sectors)	94 443
Per 100 000 population	128.1
Dentists	
Total number (public and private sectors)	21 432
Per 100 000 population	29.0
In private sector (%)	60.6
Pharmacists	
Total number (public and private sectors)	26 506
Per 100 000 population	36.0

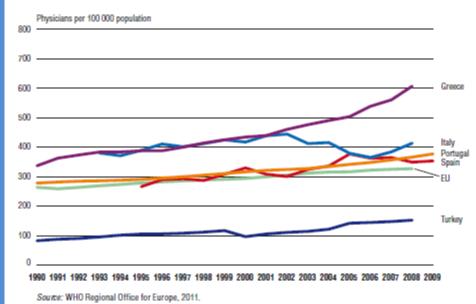
Sources: Ministry of Health, 2011b; Ministry of Health General Directorate of Personnel, 2011.

## Health care personnel in Turkey, 2001–2010

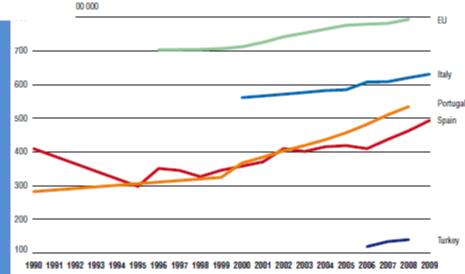
	2001	2002	2003	2004	2005	20061	2007ª	2008	2009	2010
Specialized physicians	41 907	43 660	46 563	53 344	53 103	54 075	54 439	56 973	60 655	63 563
GPs	34 974	36 545	35 559	33 255	36 585	33 753	34 559	35 763	35 911	38 818
Hospital residents (specialty training)	13 876	14 985	15 641	17 627	17 010	18 201	19 404	20 415	22 075	21 066
Active physicians	90 757	95 190	97 763	104 226	106 698	106 029	108 402	113 151	118 641	123 447
Dentists	15 866	17 108	18 073	18 363	18 771	18 089	19 278	19 959	20 589	21 432
Pharmacists	22 922	22 322	23 632	24 615	21 344	24 280	23 977	24 778	25 201	26 506
Auxiliary personnel	45 560	49 324	50 432	57 723	58 599	57 698	78 439	83 993	92 061	94 443
Nurses	75 879	79 059	82 246	82 616	83 411	85 550	94 661	99 910	105 176	114 772
Midwives	41 158	41 513	41 273	42 649	43 429	43 616	47 175	47 673	49 357	50 343

Sources: Ministry of Health Health Statistic Yearbooks 2001–2010; Ministry of Health 2011b; \*Ministry of Health General Directorate of Personnel, 2011 (December for 2006 and March for 2007).

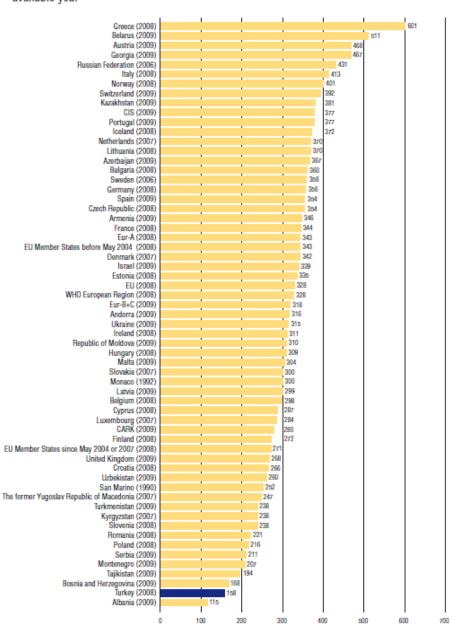




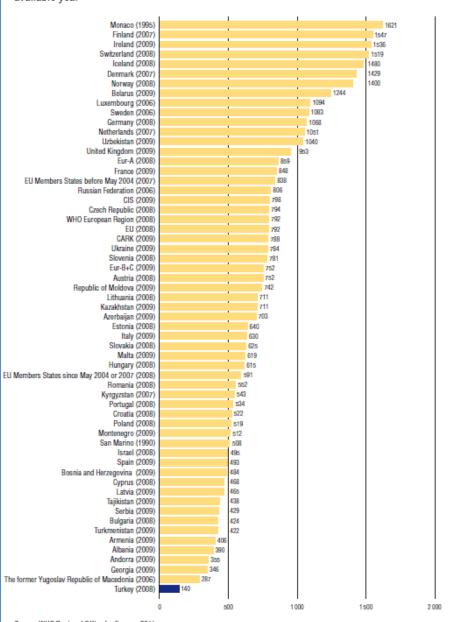
of nurses per 100 000 population in Turkey and selected countries, latest available year



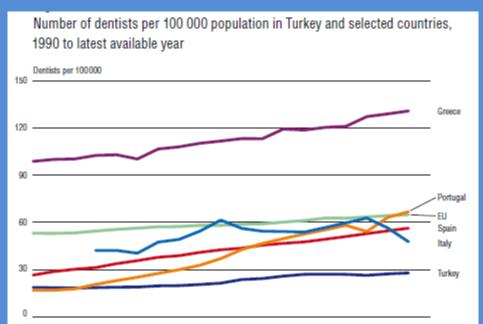
Source: WHO Regional Office for Europe, 2011. Note: Data for Greece not available. Number of physicians per 100 000 population in the WHO European Region, latest available year



Number of nurses per 100 000 population in the WHO European Region, latest available year



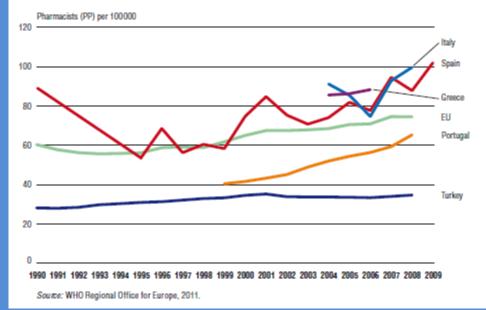
Source: WHO Regional Office for Europe, 2011.



1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009

Source: WHO Regional Office for Europe, 2011.

Number of pharmacists per 100 000 population in Turkey and selected countries, 1990 to latest available year

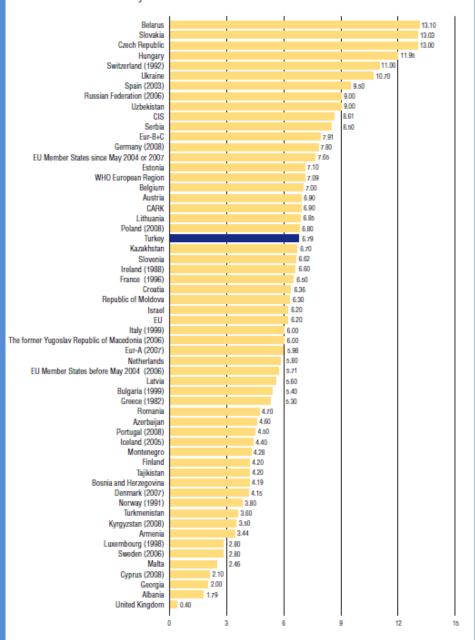


#### Vaccination schedule for children

	Birth	End of 1 month				12 months	18-24 months	Primary school, 1st grade	Primary school, 8th grade
Hepatitis B	1	II			III				
BCG			- 1						
DaPT-IPA-Hib			I	ll ll	III		В		
CPV			- 1	II	III	В			
MMR						- 1		В	
DaPT-IPA								В	
Oral polio vaccine					- 1		ll.		
Diphtheria-tetanus (adult type)								I	II

Source: Ministry of Health, 2010.
Note: CPV: Conjugated pneumococcal vaccine.

Outpatient contacts per person per year in the WHO European Region, 2009 or latest available year



Source: WHO Regional Office for Europe, 2011.

# Drug expenditure for outpatient treatment in Turkey, 1999-2008

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Health expenditure per person (US\$)	95	110	133	144	149	159	165	148	174	189
Public drug expenditure (% public THE)	25.6	27.3	28.5	30.2	29.2	28.6	29.1	36.1	34.6	32.8
Public drug expenditure (% GNP)	1.0	1.1	1.5	1.6	1.6	1.6	1.5	1.4	1.4	1.5
Public drug expenditure (% total drug expenditure)	57.3	61.9	67.6	71.3	71.9	72.2	70.9	73.6	74.4	78.5
OOP payments (% THE)	9.9	9.2	7.9	7.1	6.7	6.5	6.9	8.4	7.6	6.0

Sources: Ministry of Health RSHCP School of Public Health, 2006a, 2009 (unpublished report).

Note: THE: total health expenditure.

### Major health reforms and policy measures in Turkey, 1989–2010

Year	Description
1989–1990	Master Plan study is released, containing an analysis of the health care system and proposals for the future. Concepts such as the purchaser–provider split, internal market, family practitioners and general health insurance are used for the first time
1992	Introduction of the Green Card Scheme. Citizens under a determined poverty line are eligible to benefit from inpatient services free of charge
1993	National Health Policy document is released, analysing the current situation and identifying problems and strategies for the future
2003	Active and retired civil servants start to use private hospitals
	Legal arrangements for patient rights are put into place and hospitals start to establish patient rights units
	Contract-based appointments start for health care staff in rural and less developed regions
	A communication centre (SABIM) is established to open up ways of communicating with citizens; patient rights arrangements create authorities where patients can seek out their rights
	Total quality management is introduced within the Ministry of Health
	The individual performance-based payment system is piloted in 10 Ministry of Health hospitals
	Vaccination days are organized under the national vaccination campaign against measles
	Ambulance services offered free of charge for the first time
2004	Pilot family practitioner scheme starts in Duzce province and is subsequently extended to 23 other provinces
	Expansion of the "Extended Programme on Immunization" (including rubella, mumps and meningitis vaccinations). The number of baby-friendly hospitals is increased. New projects such as "informed mothers and healthy babies", "Turkey as Strong as Iron" and "Programme for Preventing Rickets" are launched. Community health centres are established
	Conditional cash transfers start. Grants in cash are given to the most deprived 6% of the community on condition that pregnant women and children in that community undertake the relevant medical checks
	Substantial changes are made to pharmaceutical policy regarding pricing and VAT. External reference pricing is introduced, resulting in considerable reductions in the prices of pharmaceuticals and saving the government US\$ 1 billion
	VAT is reduced from 18% to 8% for pharmaceuticals
	Patients are given the opportunity to choose their physicians; the "right to choose physician" policy is also designed to encourage competition among service providers in the public sector, including Ministry of Health hospitals, for the first time
	The Reimbursement Commission is established for reimbursement decisions
	Iron supplements are distributed free of charge to pregnant women nationally
	The individual performance-based payment system begins implementation in Ministry of Health-affiliated health care facilities
2005	Green Card coverage is extended to outpatient care and prescriptions. Although initially there were no co-payments, a 20% co-payment for pharmaceuticals was introduced later in the year because of the accelerating pharmaceutical expenditure
	Transfer of public health care facilities to the Ministry of Health, apart from Ministry of National Defence and university hospitals. A purchaser–providers split is achieved by transferring SSK hospitals to the Ministry of Health
	SSK members start to purchase their prescriptions from private pharmacies in line with other social health insurance schemes
	New regulations on pharmaceutical licensing are passed by the Ministry of Health
	Vocational medical high schools, which used to be affiliated to the Ministry of Health, are transferred to the Ministry of National Education. This move contributes to the Ministry of Health being able to concentrate further on core functions
	Institutional and quality criteria are incorporated into the performance-based supplementary payment system in Ministry of Health facilities
2006	Compulsory service for doctors is re-introduced, having been abolished in 2003. The main aim is to obtain a

Year	Description
	The Social Insurance and General Health Insurance Law is enacted, but certain articles are annulled by the Constitutional Court and implementation is delayed
	The Social Security Institution Law (Law No. 5502) comes into effect. Three of the major social security schemes (GERF, SSK and <i>Bağ-Kur</i> ) are to be brought together under one new body, the SSI. Full implementation is delayed until 2008
	A system is established within SSI to monitor pharmaceutical expenditures. Work also starts to set up a system to integrate reimbursement claims and establish an electronic management system for the SSI (MEDULA)
	Parliament adopts the Law on Public-Private Partnerships For Health
	The MMR vaccine is incorporated into the routine vaccination programme
	Free primary health care services are made available to all citizens, even those not covered by any social security scheme
	Global budgeting is introduced for Ministry of Health hospitals
2007	<ul> <li>The new Law on the Health Budget contains the following provisions:</li> <li>SSK and Bağ-Kur beneficiaries no longer need a referral from Ministry of Health hospitals to university hospitals;</li> </ul>
	<ul> <li>Patients suffering from chronic diseases are now allowed to refill their prescriptions at pharmacies without prior physician approval;</li> </ul>
	<ul> <li>Fixed-price payments for outpatient and inpatient procedures based on CPT (Current Procedural Terminology) and ICD-10 are introduced in all Ministry of Health-affiliated hospitals, as well as university hospitals and private hospitals that contract with the SSI;</li> </ul>
	<ul> <li>Hospitals contracted with the SSI are required to provide inpatient pharmaceuticals and medical devices free of charge (now covered by insurance) and are fined if patients are charged out ofpocket; and</li> <li>All Ministry of Health-affiliated hospitals, university hospitals and private hospitals under contract with the SSI are required to process reimbursement claims through the MEDULA system</li> </ul>
	New services are established to improve access to health care services, particularly for those living in remote areas, including snow-tracked ambulances, the marine ambulance system and motorbike emergency teams. Furthermore, the coverage rate for mobile health care services reaches 80%
2008	Parliament adopts the necessary amendments to the Social Insurance and General Health Insurance Law and the legislation is ratified by the President
	The GHIS begins implementation
	The DaPT-IPA-Hib vaccine is introduced into the routine immunization programme
	The Law on Tobacco and Tobacco Products, which bans smoking in closed and open public areas, is passed by parliament
	More vehicles are added to the mobile health care services stock to further improve access for people living in areas that are hard to reach in winter, including 75 snow ambulances, 4 marine ambulances and 6 air ambulances
	The new Ministry of Health Regulation on Private Outpatient Treatment and Diagnosis Centres is adopted; the provision of "need based licensing" is added and new licensing procedures are accepted by the Ministry of Health
2009	The Health Services Strategic Plan for 2010–2014 is developed by the Ministry of Health and approved
	Health System Performance Assessment study starts
	Co-payments are introduced for physician and dentist consultations in outpatient health care services
2010	Health premium payments of government employees and their dependants are devolved to the SSI
	The Draft Law on Public-Hospital associations is submitted to parliament. Once the Draft Law is enacted, secondary and tertiary health care facilities will be restructured as associations and these health care facilities will be managed by executive boards
	The Law on Full-Time Medical Practice of University and Public Sector Health Personnel is adopted, paving the way to legally enforce full-time practice of health services personnel in the public sector. However, after a challenge in the Constitutional Court, the new arrangements (as at July 2010) require only staff at Ministry of Health facilities to choose between full-time public or private practice, the practice in both sectors, provided that their daily full-time public duties are met first
	Big cities such as Ankara and Istanbul are included in the family practitioner scheme, which begins implementation nationwide